

REMARKS

Claims 1-57 are pending in the present application. Claims 49 and 55 have been amended to correct typographical errors and to define more clearly what Applicant regards as the invention.

Favorable consideration and early passage to issue of this application is respectfully requested.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

49. (Amended) An image processing apparatus operable to process image data defining a plurality of images of a subject object recorded at different positions relative thereto and data defining the relative positions of the images, to generate data defining a three-dimensional computer surface shape model of the subject object and texture maps defining texture data for the surface shape model, the apparatus comprising:

a polygon mesh generator operable to process the image data and the data defining the relative positions to generate data defining a polygon mesh representing the surface shape of the subject object;

a texture map image generator operable to generate data defining a plurality of texture map images, each representing a view of the polygon mesh from a respective viewing direction;

a visibility tester operable to process the polygon mesh and the texture map images to test the visibility of the polygons in the texture map images and to generate, in dependence thereon:

data defining the polygons in the mesh for which the visibility in each texture map image is less than a threshold; and

data defining texture coordinates in a texture map image for each other polygon in the polygon mesh;

a texture generator operable to:

[a first texture data generator operable to] generate texture data for each texture

map image in dependence upon the image data, and to store the generated data as texture maps for the polygon mesh; and

[a second texture data generator operable to] generate texture data for the identified polygons in the mesh for which the visibility in each texture map image is less than the threshold in dependence upon the image data, and to store the generated texture data as at least one further texture map for the polygon mesh.

55. (Amended) An image processing apparatus operable to process image data defining a plurality of images of a subject object recorded at different positions relative thereto and data defining the relative positions of the images, to generate data defining a three-dimensional computer surface shape model of the subject object and texture maps defining texture data for the surface shape model, the apparatus comprising:

means for processing the image data and the data defining the relative positions to generate data defining a polygon mesh representing the surface shape of the subject object;

means for generating data defining a plurality of texture map images, each representing a view of the polygon mesh from a respective viewing direction;

means for processing the polygon mesh and the texture map images to test the visibility of the polygons in the texture map images and to generate, in dependence thereon:

data defining the polygons in the mesh for which the visibility in each texture map image is less than a threshold; and

data defining texture coordinates in a texture map image for each other polygon in the polygon mesh;

means for generating texture data for each texture map image in dependence

upon the image data, and for storing the generated data as texture maps for the polygon mesh;
and

means for generating texture data for the identified polygons in the mesh for which the visibility in each texture [snap] map image is less than the threshold in dependence upon the image data, and for storing the generated texture data as at least one further texture map for the polygon mesh.

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